

## CLAIMS

What is claimed is:

1. A method for managing an uncorrectable data error from an I/O subsystem as the UE passes through a plurality of devices in a central electronic complex (CEC), the method comprises the steps of:

- (a) detecting an I/O UE condition by at least one device in the CEC;
- (b) providing an SUE-RE (Special Uncorrectable Data Error-Recoverable Error) attention signal by the at least one device to a diagnostic system to indicate the I/O UE condition; and
- (c) analyzing the SUE-RE attention signal by the diagnostic system to produce a record for later use which can isolate the I/O UE condition to the I/O port.

2. The method of claim 1 wherein the UE can produce any of the following conditions: a UE-RE condition; an SUE-mask condition; SUE interrupt condition; a SUE-RE condition and a SUE-CS condition.

3. The method of claim 2 wherein the SUE-mask condition does not need to be reported.

4. The method of claim 1 wherein the diagnostic system comprises a processor runtime diagnostic (PRD) code.

5. The method of claim 2 wherein the detecting step (a) comprises the steps of:

2 (a1) detecting a SUE-RE condition by a first device; and  
3 (a2) detecting a SUE-CS condition by at least one other device at a later point in  
4 time, wherein the SUE-RE condition and the SUE-CS conditions are processed at substantially  
5 the same time.

1 6. The method of claim 4 wherein the PRD code is within a service processor.

1 7. The method of claim 6 wherein the PRD code accesses each of the plurality of  
2 devices through an interface within the service processor.

1 8. The method of claim 7 wherein the interface comprises a JTAG interface.

1 9. A computer readable medium containing program instructions for managing an  
2 uncorrectable data error from an I/O subsystem as the UE passes through a plurality of devices  
3 in a central electronic complex (CEC), the program instructions for:

4 (a) detecting an I/O UE condition by at least one device in the CEC;  
5 (b) providing an SUE-RE (Special Uncorrectable Data Error – Recoverable  
6 Error) attention signal by the at least one device to a diagnostic system to indicate the I/O UE  
7 condition; and

8 (c) analyzing the SUE-RE attention signal by the diagnostic system to  
9 produce a record for later use which can isolate the I/O UE condition to the I/O port.

1 10. The computer readable medium of claim 9 wherein the UE can produce any of  
2 the following conditions: a UE-RE condition; an SUE-mask condition; SUE interrupt

3 condition; a SUE-RE condition; and a SUE-CS condition.

1 11. The computer readable medium of claim 10 wherein the SUE-mask condition  
2 does not need to be reported.

1 12. The computer readable medium of claim 9 wherein the diagnostic system  
2 comprises a processor runtime diagnostic (PRD) code.

1 13. The computer readable medium of claim 10 wherein the detecting step (a)  
2 comprises the steps of:

3 (a1) detecting a SUE-RE condition by a first device; and

4 (a2) detecting a SUE-CS condition by at least one other device at a later point in  
5 time, wherein the SUE-RE condition and the SUE-CS conditions are processed at substantially  
6 the same time.

1 14. The computer readable medium of claim 12 where in the PRD code is within a  
2 service processor.

1 15. The computer readable medium of claim 14 wherein the PRD code accesses  
2 each of the plurality of devices through an interface within the service processor.

1           16.    The computer readable medium of claim 15 wherein the interface comprises a  
2 JTAG interface.

1           17.    A service processor for managing an uncorrectable data error from an I/O  
2 subsystem as the UE passes through a plurality of devices in a central electronic complex  
3 (CEC), the service processor comprises:

4           an attention handler for detecting an I/O UE condition by at least one device in the  
5 CEC and providing an SUE-RE (Special Uncorrectable Data Error-Recoverable Error)  
6 attention signal by the at least one device to indicate the I/O UE condition; and

7           a diagnostic system for receiving the attention signal and for analyzing the SUE-RE  
8 attention signal system to produce a record for later use which can isolate the I/O UE condition  
9 to the I/O port.

1           18.    The service processor of claim 17 wherein the UE can produce any of the  
2 following conditions: a UE-RE condition; an SUE-mask condition; SUE interrupt condition, a  
3 SUE-RE condition and a SUE-CS condition.

1           19.    The service processor of claim 18 wherein the SUE-mask condition does not  
2 need to be reported.

1           20.    The service processor of claim 17 wherein the diagnostic system comprises a  
2 processor runtime diagnostic (PRD) code.

1           21.    The service processor of claim 18 wherein the attention handler detects a SUE-

2 RE condition by a first device, and detects a SUE-CS condition by at least one other device at a  
3 later point in time, wherein the SUE-RE condition and the SUE-CS conditions are processed at  
4 substantially the same time.

1 22. The service processor of claim 20 wherein the PRD code accesses each of the  
2 plurality of devices through an interface within the service processor.

1 23. The service processor of claim 22 wherein the interface comprises a JTAG  
2 interface.

1 24. A method for managing an uncorrectable data error from an I/O subsystem as  
2 the UE passes through a plurality of devices in a central electronic complex (CEC), the method  
3 comprises the steps of:

4 (a) detecting an I/O UE condition by at least one device in the CEC wherein the  
5 detecting step (a) comprises the steps of: (a1) detecting a SUE-RE condition by a first device;  
6 and (a2) detecting a SUE-CS condition by the at least one other device at a later point in time,  
7 wherein the SUE-RE condition and the SUE-CS conditions are processed at substantially the  
8 same time;

9 (b) providing an SUE-RE (Special Uncorrectable Data Error-Recoverable Error)  
10 attention signal by at least one device to a processor runtime diagnostic (PRD) code to indicate  
11 the I/O UE condition, wherein the PRD accesses each of the plurality of devices through an  
12 interface within the service processor; and

13 (c) analyzing the SUE-RE attention signal by the diagnostic system to produce a  
14 record for later use which can isolate the I/O UE condition to the I/O port.

1           25.     The method of claim 24 wherein the UE can produce any of the following  
2 conditions: a UE-RE condition; an SUE-mask condition; SUE interrupt condition; a SUE-RE  
3 condition and a SUE-CS condition.

1           26.     The method of claim 25 wherein the SUE-mask condition does not need to be  
2 reported.

1           27.     The method of claim 26 wherein the PRD code is within a service processor.

1           28.     The method of claim 27 wherein the interface comprises a JTAG interface.

1           29.     A computer readable medium containing program instructions for managing an  
2 uncorrectable data error from an I/O subsystem as the UE passes through a plurality of devices  
3 in a central electronic complex (CEC), the method comprises the steps of:

4           (a) detecting an I/O UE condition by at least one device in the CEC wherein the  
5 detecting step (a) comprises the steps of: (a1) detecting a SUE-RE condition by a first device;  
6 and (a2) detecting a SUE-CS condition by the at least one other device at a later point in time,  
7 wherein the SUE-RE condition and the SUE-CS conditions are processed at substantially the  
8 same time;

9           (b) providing an SUE-RE (Special Uncorrectable Data Error-Recoverable Error)  
10 attention signal by at least one device to a processor runtime diagnostic (PRD) code to indicate  
11 the I/O UE condition, wherein the PRD accesses each of the plurality of devices through an  
12 interface within the service processor; and

14 record for later use which can isolate the I/O UE condition to the I/O port.

1 30. The computer readable medium of claim 29 wherein the UE can produce any of  
2 the following conditions: a UE-RE condition; an SUE-mask condition; SUE interrupt  
3 condition; and a SUE-CS condition.

1 31. The computer readable medium of claim 30 wherein the SUE-mask condition  
2 does not need to be reported.

1 32. The computer readable medium of claim 31 wherein the PRD code is within a  
2 service processor.

1 33. The computer readable medium of claim 32 wherein the interface comprises a  
2 JTAG interface.

1 34. A service processor for managing an uncorrectable data error from an I/O subsystem as  
2 the UE passes through a plurality of devices in a central electronic complex (CEC), the service  
3 processor comprises:

4 an attention handler for detecting an I/O UE condition by at least one device in the  
5 CEC and providing an SUE-RE (Special Uncorrectable Data Error-Recoverable Error)  
6 attention signal by the at least one device to indicate the I/O UE condition wherein the attention  
7 handler detects a SUE-RE condition by a first device, and detects a SUE-CS condition by at  
8 least one other device at a later point in time, wherein the SUE-RE condition and the SUE-CS

9 conditions are processed at substantially the same time; and

10 a processor runtime diagnostic (PRD) code for receiving the attention signal and for  
11 analyzing the SUE-RE attention signal system to produce a record for later use which can  
12 isolate the I/O UE condition to the I/O port.

1 35. The service processor of claim 34 wherein the UE can produce any of the  
2 following conditions: a UE-RE condition; an SUE-mask condition; SUE interrupt condition, a  
3 SUE-RE condition and a SUE-CS condition.

1 36. The service processor of claim 35 wherein the SUE-mask condition does not  
2 need to be reported.

1 37. The service processor of claim 36 wherein the PRD code accesses each of the  
2 plurality of devices through an interface within the service processor.

1 38. The service processor of claim 37 wherein the interface comprises a JTAG  
2 interface.

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